In the Claims

1-41. (canceled)

42. (previously presented) A method for detecting a presence of at least one of a wildfire and an electrical arc burning proximate to Earth's surface, said method comprising:

selecting a detection wavelength that is emitted by the wildfire and said electrical arc and which transmits in a first way at the Earth's surface as a result of a first ratio of oxygen compounds proximate to the surface of Earth, but which detection wavelength transmits in a second way in Earth's stratosphere based on a second, different ratio of oxygen compounds present in Earth's stratosphere;

using a detection arrangement positioned such that the detection wavelength travels from said wildfire to the detection arrangement in the presence of said first ratio of said oxygen compounds and so that sunlight arriving at said detection arrangement travels through Earth's stratosphere so as to subject the sunlight to said second ratio of oxygen compounds in a way which attenuates content of the detection wavelength in the sunlight; and

configuring said detection arrangement to respond at the detection wavelength so as to enhance a detection response to the wildfire while attenuating the response to the detection wavelength in the sunlight based on said first and second ratios of said oxygen compounds.

43. (previously presented) The method of Claim 42 wherein the detection wavelength is selected within a wavelength range between 230 and 280 nm, which wavelength range is (i) contained by sunlight, (ii) substantially blocked when the sunlight passes through the Earth's stratosphere and (iii) travels through the atmosphere at the surface of the Earth so as to provide for a high sensitivity of said detection arrangement to said wildfire and said electrical arc.

44. (previously presented) The method of Claim 43 wherein said detection arrangement is configured for a high sensitivity to the wavelength range between 230 nm to 280 nm and for a reduced sensitivity to a wavelength longer than 280 nm such that the detection arrangement is essentially solar blind above 280 nm where said reduced sensitivity is less than said high sensitivity.

45. (previously presented) The method of Claim 44 including configuring said detection arrangement to include a wide angular sensitivity.

46. (previously presented) The method of Claim 43 including configuring said detection arrangement with a sensitivity within the 230-280 nm band that is at least 25 dB higher than at 280 nm and 100 db higher than at 320 nm.

47. (previously presented) An apparatus for detecting a presence of at least one of a wildfire and an electrical arc burning proximate to Earth's surface, said wildfire and said electrical arc being characterized by a wavelength that is emitted by the wildfire and electrical arc and which transmits in a first way at the Earth's surface as a result of a first ratio of oxygen compounds proximate to the surface of the Earth, but which wavelength transmits in a second way in Earth's stratosphere based on a second, different ratio of oxygen compounds present in Earth's stratosphere, said apparatus comprising:

a detection arrangement disposed such that said wavelength travels from said wildfire to the detection arrangement in the presence of said first ratio of said oxygen compounds and so that sunlight arriving at said detection arrangement travels

through Earth's stratosphere so as to subject the sunlight to said second ratio of oxygen compounds in a way which attenuates content of the detection wavelength in the sunlight, said detection arrangement being configured to respond at the detection wavelength so as to enhance a detection response to the wildfire while attenuating the detection response to the wavelength to sunlight based on said first and second ratios of said oxygen compounds.

48. (previously presented) The apparatus of claim 47 wherein the detection arrangement is configured to respond to the detection wavelength selected within a wavelength range between 230 and 280 nm, which wavelength range is (i) contained by sunlight, (ii) substantially blocked when the sunlight passes through the Earth's stratosphere and (iii) travels through the atmosphere at the surface of the Earth so as to provide for a high sensitivity of said detection arrangement to said wildfire and said electrical arc.

49. (previously presented) The apparatus of Claim 48 wherein said detection arrangement is configured for a high sensitivity to a wavelength range between 230 nm to 280 nm and for a reduced sensitivity to a wavelength longer than 280 nm such that the detection arrangement is essentially solar blind above 280 nm where said reduced sensitivity is less than said high sensitivity.

50. (previously presented) The apparatus of Claim 49 wherein said detection arrangement is configured to provide a wide angular sensitivity.

51. (previously presented) The apparatus of Claim 50 wherein said detection arrangement is configured with a sensitivity within the 230-280 nm band that is at least 25 dB higher than at 280 nm and 100 dB higher than at 320 nm.

52. (previously presented) The apparatus of claim 47 wherein said detection arrangement is characterized by a sensitivity for detecting a ten meter flame at a distance of 1600 meters.

53. (previously presented) The apparatus of claim 47 wherein said detection arrangement includes a hemispherical field of view, at least to an approximation.

54. (currently amended) The apparatus of claim 47 wherein said wildfire and said electrical arc are characterized by emission of ultraviolet (UV) radiation at said detection wavelength and said detection arrangement includes

a Geiger-Mueller tube (GM tube), which GM tube exhibits a given response at a maximum rated bias voltage when exposed to said detection wavelength as well as when concurrently exposed to a plurality of extraneous noise sources for use in generating a pulse output;

a driver for operating said GM tube in a way which produces a modified response of the GM tube, thereby increasing sensitivity of the GM tube over said given response with respect to said detection wavelength as well as with respect to the plurality of extraneous noise sources so as to increase a relative number of pulses in the pulse output responsive to the detection wavelength and responsive to the extraneous noise sources, as compared to operating said GM tube at the maximum rated bias voltage;

a processing circuit for generating an intermediate output responsive to said pulse output for use in tracking a trend in the pulse output, which trend is generally responsive to the presence of at least one of said wildfire and said electrical arc, irrespective of the increase in the ~~increase in the~~ relative number of pulses in the pulse output that are responsive to said

extraneous sources; and

an alarm apparatus for producing an alarm signal based on a predetermined characteristic of said intermediate output.

55. (previously presented) The apparatus of Claim 54 wherein said GM tube is treated for reducing sensitivity of the GM tube to at least certain ones of said plurality of extraneous noise sources.

56. (previously presented) The apparatus of Claim 55 wherein said GM tube exhibits a sensitivity within the 230-280 nm band that is at least 25 dB higher than at 280 nm and 100 dB higher than at 320 nm.

57. (previously presented) The apparatus of Claim 55 wherein said GM tube is coated with an antistatic material that is transmissive with respect to said detection wavelength.

58. (previously presented) The method of claim 42 wherein said wildfire and said electrical arc are characterized by emission of ultraviolet (UV) radiation at said detection wavelength and using, as part of said detection arrangement, a Geiger-Mueller tube (GM tube) having a given response at a maximum rated bias voltage when exposed to said detection wavelength, as well as when concurrently exposed to a plurality of extraneous noise sources, to generate a pulse output by operating said GM tube so as to produce a modified response of the GM tube, thereby increasing sensitivity of the GM tube over said given response with respect to said detection wavelength, as well as with respect to the plurality of extraneous noise sources, so as to increase a relative number of pulses in the pulse output, responsive to the detection wavelength and responsive to the extraneous noise sources, as compared to operating said GM tube at the maximum rated bias voltage.

59. (previously presented) The method of claim 58 including generating an intermediate output responsive to said pulse output for tracking a trend in the pulse output, which trend is generally responsive to the presence of at least one of said wildfire and electrical arc, irrespective of the increase in the relative number of pulses in the pulse output that are responsive to said extraneous sources.

60. (previously presented) The method of Claim 59 wherein said intermediate output is generated responsive to pulses occurring within an event window that continuously terminates at present time and extends backward therefrom by a selected time duration.

61. (previously presented) The method of claim 59 including producing an alarm signal based on a predetermined characteristic of said intermediate output.

62. (previously presented) The method of Claim 58 wherein said GM tube includes a maximum operating voltage and wherein increasing sensitivity of the GM tube over said given response, with respect to said detection wavelength, includes operating said GM tube by applying an operating bias voltage which is greater than said maximum rated bias voltage.

63. (previously presented) The method of Claim 58 further comprising treating said GM tube in a way which reduces a sensitivity of the GM tube to at least certain ones of said plurality of extraneous noise sources.

64. (previously presented) The method of Claim 63 wherein said GM tube is configured for a high sensitivity to the wavelength range between 230 nm to 280 nm and for a reduced sensitivity to a wavelength longer than 280 nm such that the detection arrangement is essentially solar blind above 280 nm where said reduced sensitivity is less than said high sensitivity.

65. (previously presented) The method of Claim 63 wherein said treating includes coating at least said GM tube with an antistatic material that is transmissive with respect to said detection wavelength.

66. (previously presented) The method of Claim 63 wherein said treating includes

applying a pre-conditioning voltage to said GM tube, said pre-conditioning voltage being higher than said maximum rated bias voltage, and

during application of said pre-conditioning voltage, exposing said GM tube to at least certain light generating ones of said plurality of extraneous noise sources.

67. (previously presented) The method of Claim 66 wherein exposing said GM tube includes subjecting said GM tube to sunlight during application of said pre-conditioning voltage.

68. (previously presented) The method of claim 42 wherein said detection arrangement is configured with a sensitivity for detecting a ten meter flame at a distance of 1600 meters.

69. (previously presented) The method of claim 42 including configuring said detection arrangement to include a hemispherical field of view, at least to an approximation.

70. (previously presented) In a method for long-range detection of at least one of wildfires and electrical arcing from a location that is proximate to the Earth's surface, the improvement comprising:

selecting a detection wavelength that is emitted by a flame of said wildfire, said electrical arcing, and the Sun such that the detection wavelength is substantially blocked on propagation through the Earth's stratosphere as compared to propagation of the detection wavelength through the Earth's troposphere.

71. (new) The method of claim 70 wherein said wildfire emits a particular range of UVC wavelengths and said particular range of UVC includes a first transmission characteristic through O_2 proximate to the surface of the Earth for the particular range of UVC wavelengths as emitted by the wildfire and a second transmission characteristic through stratospheric O_3, when the particular range of UVC is contained by sunlight, and wherein said detection wavelength is selected in said particular range of UVC wavelengths based on propagation of the particular range of UVC by said first transmission characteristic and blocking of said particular range of UVC wavelengths by said second transmission characteristic.

72. (new) The method of claim 71 wherein the detection wavelength is approximately 250 nm.

73. (new) A method for detecting a presence of a wildfire burning near the Earth's surface, said method comprising:

selecting a detection wavelength that is emitted by the wildfire such that said detection wavelength includes a first transmission characteristic through O_2 proximate to the surface of the Earth for the detection wavelength as emitted by the wildfire, and a second transmission characteristic through stratospheric O_3, for the detection wavelength as contained by sunlight, such that the detection wavelength that is emitted by the wildfire is capable of propagating to a detection location near the surface of the Earth, subject to said first transmission characteristic, and the detection wavelength is, at least to an approximation, eliminated from sunlight, by said second transmission characteristic, that reaches the detection location; and

positioning a detection arrangement at the detection location for monitoring an intensity of the detection wavelength.

74. (new) The method of claim 73 wherein the detection wavelength is selected as approximately 250 nm.

75. (new) The method of claim 42 wherein the detection wavelength is selected as approximately 250 nm.

76. (new) A method for detecting a presence of a wildfire and/or an electrical arc burning near the Earth's surface wherein said wildfire and said electrical arc are characterized by emission of a range of ultraviolet (UV) radiation, said method comprising:

selecting a detection wavelength that is emitted by the wildfire and the electrical arc in said range of ultraviolet radiation such that said detection wavelength includes a first transmission characteristic through O_2 proximate to the surface of the Earth for the detection wavelength as emitted, and a second transmission characteristic through stratospheric O_3, for the detection wavelength as contained by sunlight, such that the detection wavelength that is emitted by the wildfire and the electrical arc is capable of propagating to a detection location near the surface of the Earth, subject to said first transmission characteristic, and the detection wavelength is, at least to an approximation, eliminated from sunlight, by said second transmission characteristic, that reaches the detection location;

positioning a detection arrangement at the detection location for monitoring an intensity of the detection wavelength;

configuring the detection arrangement with (i) a Geiger-Mueller tube (GM tube), which GM tube exhibits a given response at a maximum rated bias voltage when exposed to said detection wavelength as well as when concurrently exposed to a plurality of extraneous noise sources for use in generating a pulse output and (ii) a driver for operating said GM tube in a way which produces a modified response of the GM tube, thereby increasing sensitivity of the GM tube over said given response with respect to said detection wavelength as well as with respect to the plurality of extraneous noise sources so as to increase a relative number of pulses in the pulse output responsive to the detection wavelength and responsive to the extraneous noise sources, as compared to operating said GM tube at the maximum rated bias voltage;

generating an intermediate output, responsive to said pulse output, for use in tracking a trend in the pulse output, which trend is generally responsive to the presence of at least one of said wildfire and said electrical arc, irrespective of the increase in the relative number of pulses in the pulse output that are responsive to said extraneous sources; and

producing an alarm signal, based on a predetermined characteristic of said intermediate output.

77. (new) The method of Claim 76 including treating said GM tube for reducing sensitivity of the GM tube to at least certain ones of said plurality of extraneous noise sources.